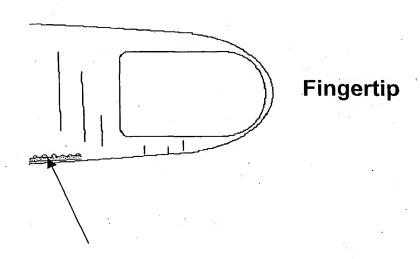
Sheet 1 of 19 Filed: HEREWIT Title: Non-invasive measurement of analytes Inventors: Workman and Lambert Mintz, Levin, Cohn, Ferris, Glovsky and Popeo; Telephone: (617) 542-6000

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Reporter and Marker colors

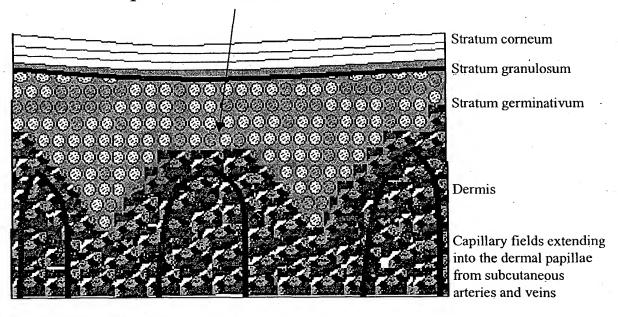
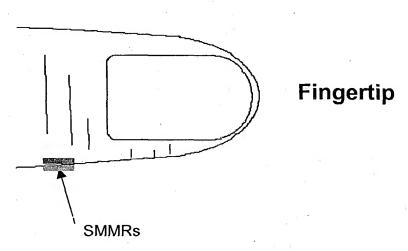


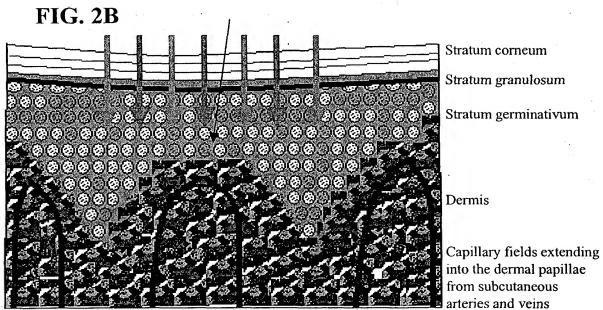
FIG. 1

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FIG. 2A

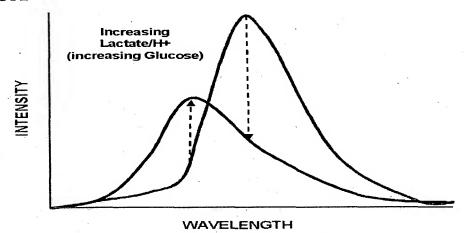


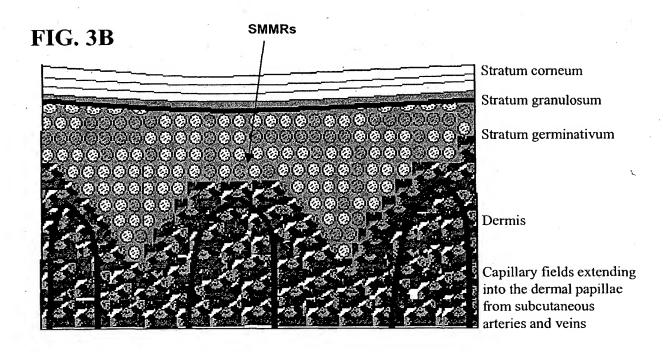


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FIG. 3A





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FIG. 4A

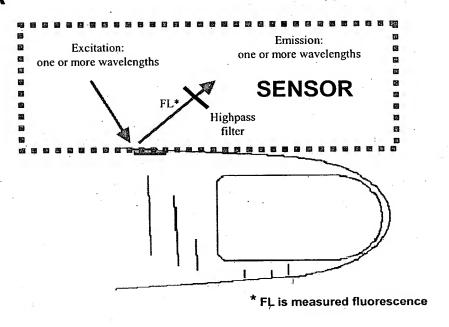
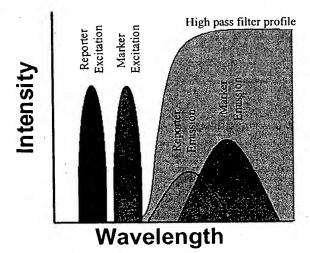


FIG. 4B



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FIG. 5A

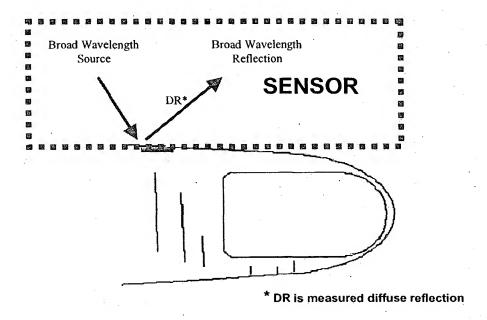
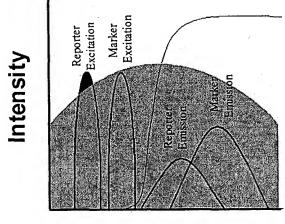


FIG. 5B



Wavelength

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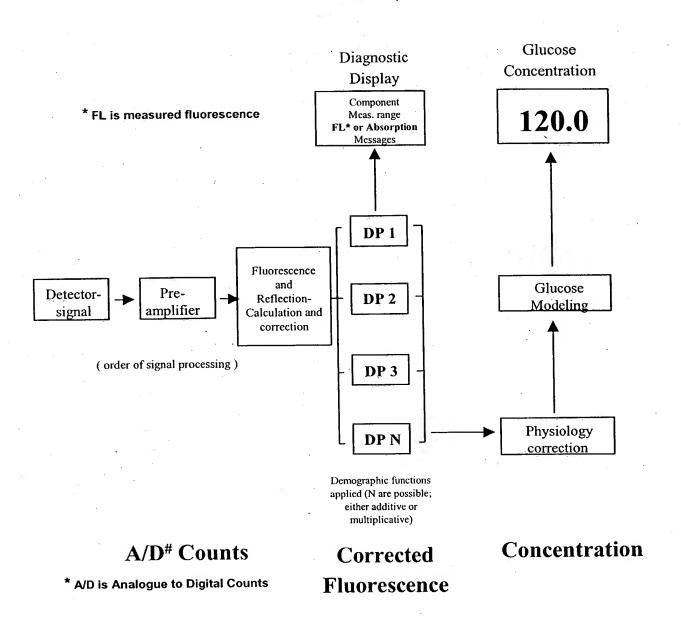


FIG. 6

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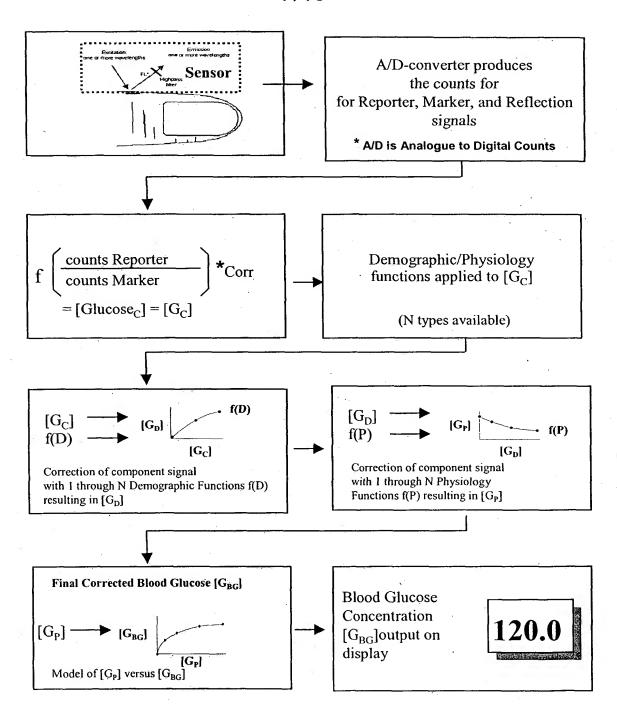


FIG. 7

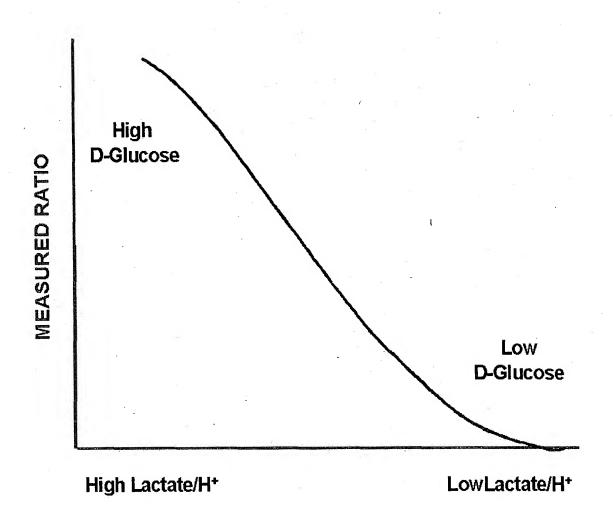


FIG. 8

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FIG. 9A

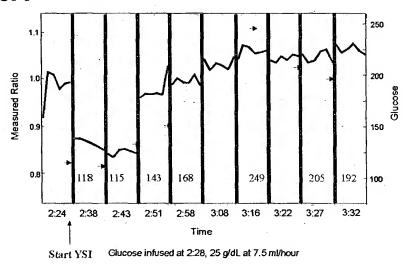
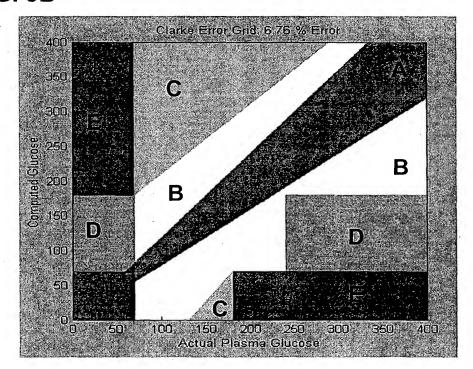


FIG. 9B



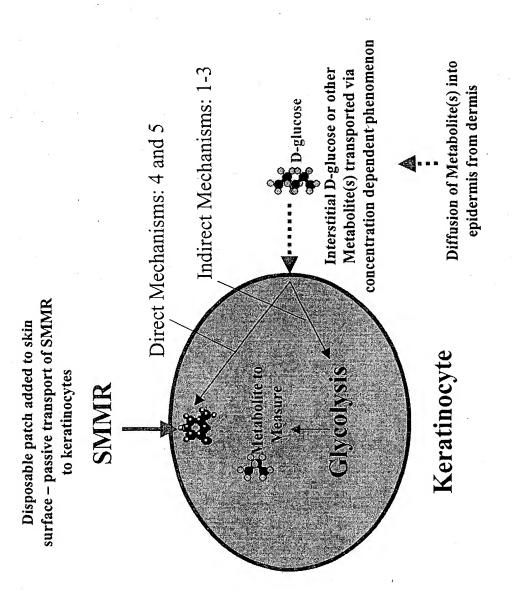
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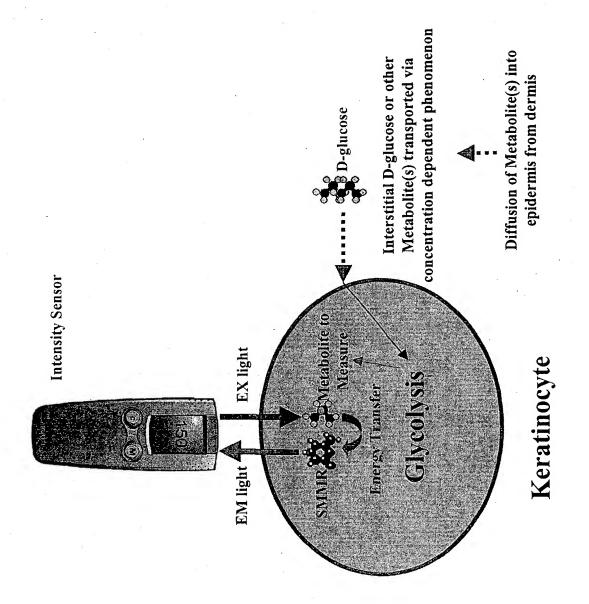
Human keratinocytes

Human skin

FIG. 10A

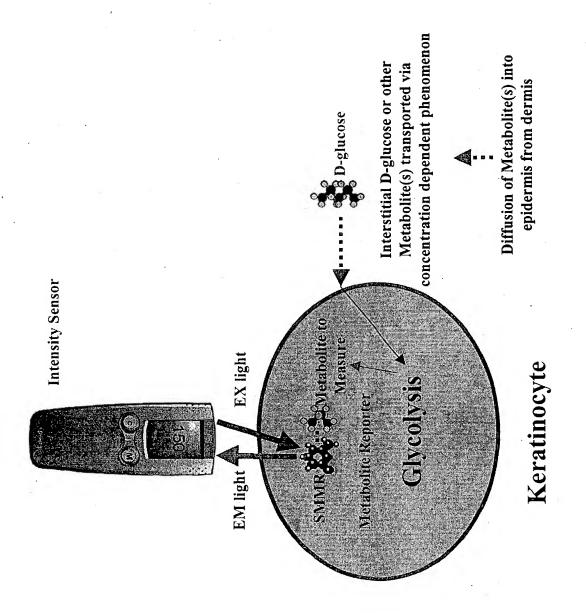


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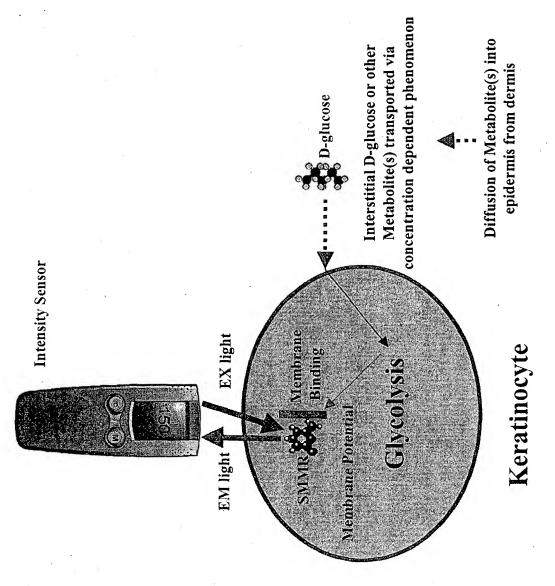
Sheet 13 of 19
Title: Non-invasive measurement of analytes
Inventors: Workman and Lambert
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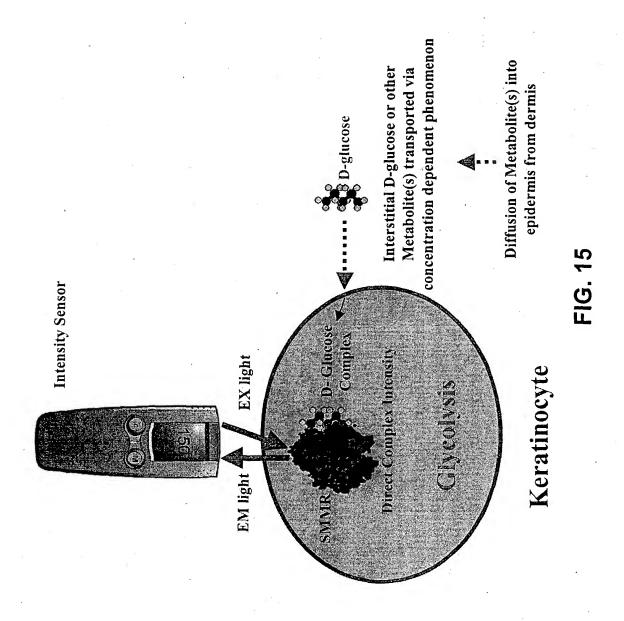


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Title: Non-invasive measurement of analytes
Inventors: Workman and Lambert
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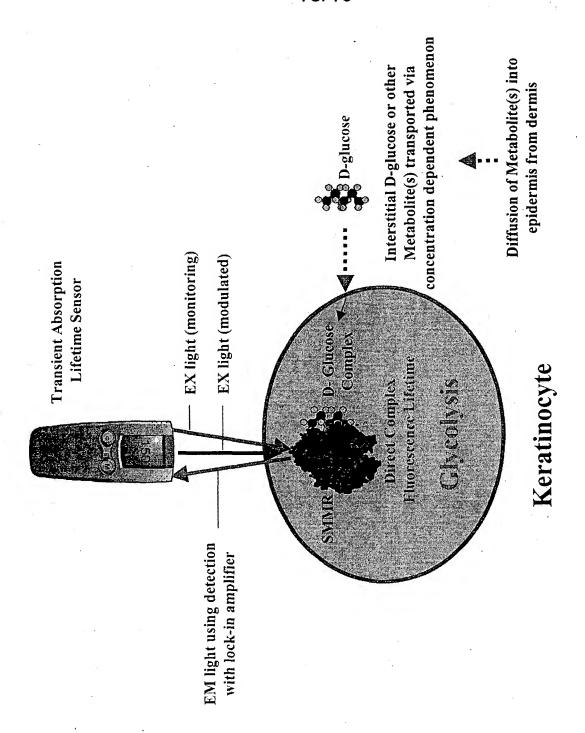


FIG. 16

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Fluorescence SMMRs; Vis stains,

³¹P NMR

Title: Non-invasive measurement of analytes Inventors: Workman and Lambert

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FIG. 17A

Scheme 1 Intracellular glucose Glc Pyr Pyruvate Gl-6-P Glucose-6-phosphate Gl-1-P Glucose-1-phosphate UDP-GLc UDP-glucose Glucose transporter protein GluT Glycogen particles: via Iodine colorimetric, OCT GLuT1: via Fluorescence of tryptophan; and Visible and Fluorescence membrane **SMMRs** Lactate and pH: via Visible and Fluorescence SMMRs; ¹H NMR, NADPH/FAD: via Visible and ³¹P NMR

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Inventors: Workman and Lambert

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FIG. 17B

Scheme 2. Overview of metabolic pathways for glucose in epidermis

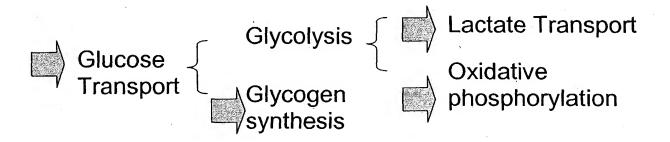


FIG. 17C

Scheme 3. Structure of generic pH sensitive dye for specific action as a lactate/H⁺ SMMR

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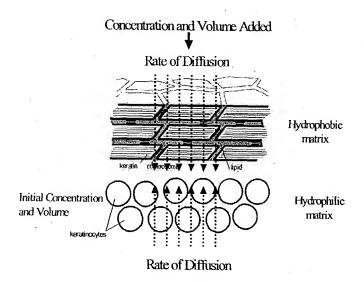
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Scheme 4. In Vivo Calibration Issues

FIG. 17D

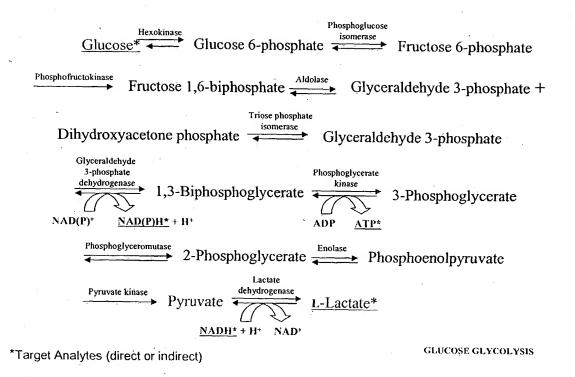


FIG. 18